2004 Energy

The Solutions Network

Rochester, New York

Alternative Financing

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Agenda

- Fort Monmouth Overview
- Scope of Work
- Financial Summary
- Benefits

Video

Fort Monmouth Makes History

- Legislation sunset (September 30, 2003)
- Kickoff meeting to task order- 98 days
- Task order issued 6:00 p.m. September 30, 2003

Scope of Work

- ECM 1 – Lighting upgrade
- ECM 2 – Building 800 HVAC renovation
- ECM 3 – UESC area-wide implementation
- ECM 4 – Geothermal heat pumps (1200 Area)
- ECM 7a – Cogeneration system site prep/feasibility (Bldg 2700)

Lighting Upgrade

- New fixtures
- T8 & T5 lamps
- Electronic ballast
- Exit signs
- Controls
- Installation covered 1,248,036 sq. ft.
  - Bldg 114
  - Bldg 116
  - Bldg 117
  - Bldg 209
  - Bldg 270
  - Bldg 271
  - Bldg 277
  - Bldg 283
  - Bldg 286
  - Bldg 288
  - Bldg 292
  - Bldg 502
  - Bldg 689
  - Bldg 918
  - Bldg 975
  - Bldg 976
  - Bldg 1075
  - Bldg 1212
  - Bldg 2700

Building 800 Renovation

- Currently under renovation
- Structural complete
- Ready for build-out
- Funds for HVAC unavailable
- 60-ton AC and furnaces removed for renovation
- Renovation includes installing closed-loop geothermal heat pumps in place of existing fan coils and air handling units

UESC Area-Wide Implementation

- Fort Monmouth was currently developing an energy and operational savings program under an area-wide contract with the local utility. The program, referred to as the Utility Energy Services Contract (UESC), was based on four tasks:
  - Task 1 Boiler Plant (Building 1220) decentralization
  - Task 2 Site-wide controls infrastructure
  - Task 3 Geographic Information Systems (GIS)
  - Task 4 Facility Management Job Order System (CMMS)
- Ameresco bundled the project into the ESPC, captured the savings over the 22-year term, redesigned tasks 1 and 2 and pulled through tasks 3 and 4
- Positive cash flow utilized to pull through ECM 4

Geothermal Heat Pumps (1200 Area)

- Demolish central steam plant.
- Replace existing fan coils and fin-tube heaters (approximately 185 per building) with geothermal console units.
- All existing air handlers, unit ventilators and duct ceiling-fan coil units will be replaced with geothermal air handlers.
- A series of vertical boreholes will be drilled into the ground outside each facility and a closed loop of high-density polyethylene (HDPE) piping will be installed in each borehole. This will be an entirely closed-loop system – no fluid will be taken from or rejected into the ground.

Geothermal Heat Pumps (1200 Area)

- Buildings 1200, 1201, 1202, 1206, 1207, 1208, 1209, 1210, 1211, 1212 1150 and 1152,
- 2,351 tons of cooling
- 774,971 sq. ft.

Cogeneration System Site-Prep/Feasibility

- The feasibility of a 15 MW landfill gas-fired cogeneration system being installed at the Fort Monmouth site is being evaluated
- First Federal project of its type
- Four mile pipeline
- Electrical interconnection between Charles Wood and main post
- Fixed gas price for 23 years
- Gross electrical power output -15.4 MW

Measurement & Verification

- Maintenance monitored by Ameresco and continued with existing personnel
- Monitoring & Verification (M&V)
  - **Option A:** Stipulated baseline and savings, verified equipment performance
  - **Option B:** System-level M&V assessment that relies on the physical assessment of equipment to ensure that installation is to specification. The potential of the ECM to generate savings is verified through observations, inspections, spot, short-term, and/or continuous metering.

Financial Summary

- Total amount financed $25,112,932
- Annual energy savings $ 1,727,872
- Annual M&O savings $ 877,578
- Term 22 years
- Finance rate 6.79%

Contract

Features

- Title conveys to Ft. Monmouth at acceptance
- 24 month construction period savings used to buy-down principal
- Yearly payments made in advance vs. arrears

Benefits

- Ameresco doesn't pay yearly taxes in turn lowering overall cost to the customer
- Ft. Monmouth saved on interest and shortened term the contract term

Program Benefits

- Expedite Ft. Monmouth's transformation vision while improving existing building infrastructure
- Provide safer and healthier working conditions
- Reduce energy use and costs
- Reduce maintenance deficit and costs
- Help meet federal energy and emissions-reduction goals
- Insure guaranteed results

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THANK YOU

U.S. ARMY GARRISON FORT MONMOUTH